September 4, 2002

MODIS sensor Working Group (MsWG) Summary

Attendance: Bob Barnes, Stuart Biggar, Vincent Chiang, Wayne Esaias, Bruce Guenther, Eddie Kearns, Gerhard Meister, Chris Moeller, Vince Salomonson, Junqiang Sun, Gary Toller, Jack Xiong, Eric Vermote, Zhengming Wan, Joe Esposito

Scheduled Items

Item 1 Terra and Aqua MODIS Instrument Status

JX) The Terra formatter error rate is increasing very slowly. The rate is currently approaching 60M errors/day.
Aqua command dropouts have occurred 5 times (3 effect the SD/SDSM calibrations, 2 effect day-night transition).

Item 2 LUTs Related Issues (Aqua and Terra)

JX) Terra collect 4 will include update of all m1 LUTs and will also include time dependent RVS. The newest m1 increase will be included (after June 30, 2002) for the ocean bands (B8-16). PC bands $a_0 = 0$ except for B31 and B32.
The first Aqua on-orbit m1 LUTs was delivered and used in production on July 29, 2002. For B31 and B32 need to get coefficients (a_0 and a_2) from BB warm-up/cool-down data. Several safe modes have occurred. Thus, the Aqua LUT tables will be updated. m_1 will be piecewise linear interpolation without linear fitting (using on-orbit data only). Will set $a_0 = 0$ for the PC bands.

Item 3 SWIR OOB Correction Test Results for Aqua

JX) Use the same approach as was used on Terra – track each SWIR band vs. B28 for day mode at night data. Get coefficients from fit for the SWIR OOB correction. Apply the coefficients to the m1 calculations and L1B product for the SWIR bands. The plots in the handout show images without and with the correction applied. B5 seems improved, B7 shows little OOB effect but is slightly improved, and B26 seems to be improved but is not clearly improved.

CM) Do the images have the same intensity scaling? (VC: The images have the same intensity scaling for each band but not necessarily the same from band to band). B26 seems to be brighter after the correction. Does the higher radiance of B26 after SWIR OOB correction imply a problem?

JX) For B26 the coefficients are positive. It should be less bright. VC needs to check the scale applied to the plots B28 is the best match for the 5.3μm leak.

CM) B28 is doing a good job. Whether or not B28 is the best match may not be important. If you send me the data I can validate the coefficients. (*MCST Action: send SWIR OOB RSR to CM*).

BG) The Aqua correction is smaller than Terra.

JX) CM will need OOB correction applied in L1B so that he can analyze the B5 to B26 X-talk coefficients.

CM) For Aqua B33-B36, will the a_0 be non-zero?

JX) MCST will deliver a0 = 0 for Aqua B33-B36.

VS) When can we say that Terra and Aqua MODIS have the same calibration.

JX) It's hard to say at this moment. MCST is currently working on this.

AZ sees a 10% difference between Aqua and Terra based on one data point at RRV. MCST wants a look at the moon with both Aqua and Terra for an independent comparison. RRV validation support is very important for finding instrument difference. The deep space maneuver will give a comparison between Aqua and SeaWifs thereby cross correlating all 3 instruments (after Terra/Aqua moon looks).

Around the Table

Participant: Chris Moeller – Started to look at B36 for Aqua/Terra comparison. Terra looks about 1°K warmer using GOES. Without GOES spectral effect correction, the difference is about 2°K. This is consistent with previous analysis. WI uses granule 2002236.0710 (August 24th) Cuba image (*MCST Action: process this granule for CM with OOB correction*).

Participant: Wayne Esaias – Working with the data and m_1 LUTs in the time range March-June, 2002.

JX) LUTs to be delivered have three sections.

WE) Miami wants LUTs v4.05 to be used up to June 30, 2002 for reprocessing

JX) Need to have DAAC run v4.05 for reprocess and v4.08 (new delivery) for forward processing(past July 1, 2002). (MCST Action: Get LUT v 4.05 and v4.08 ready for delivery as soon as possible).

Participant: Zhengming Wan – Ran California granules for Terra and Aqua. The absorption will cause a difference of 0.5°K. No conclusion at this time. More measurements will be done.

No MsWG meeting next week (September 11, 2002).

Compiled by J. A. Esposito September 4, 2002